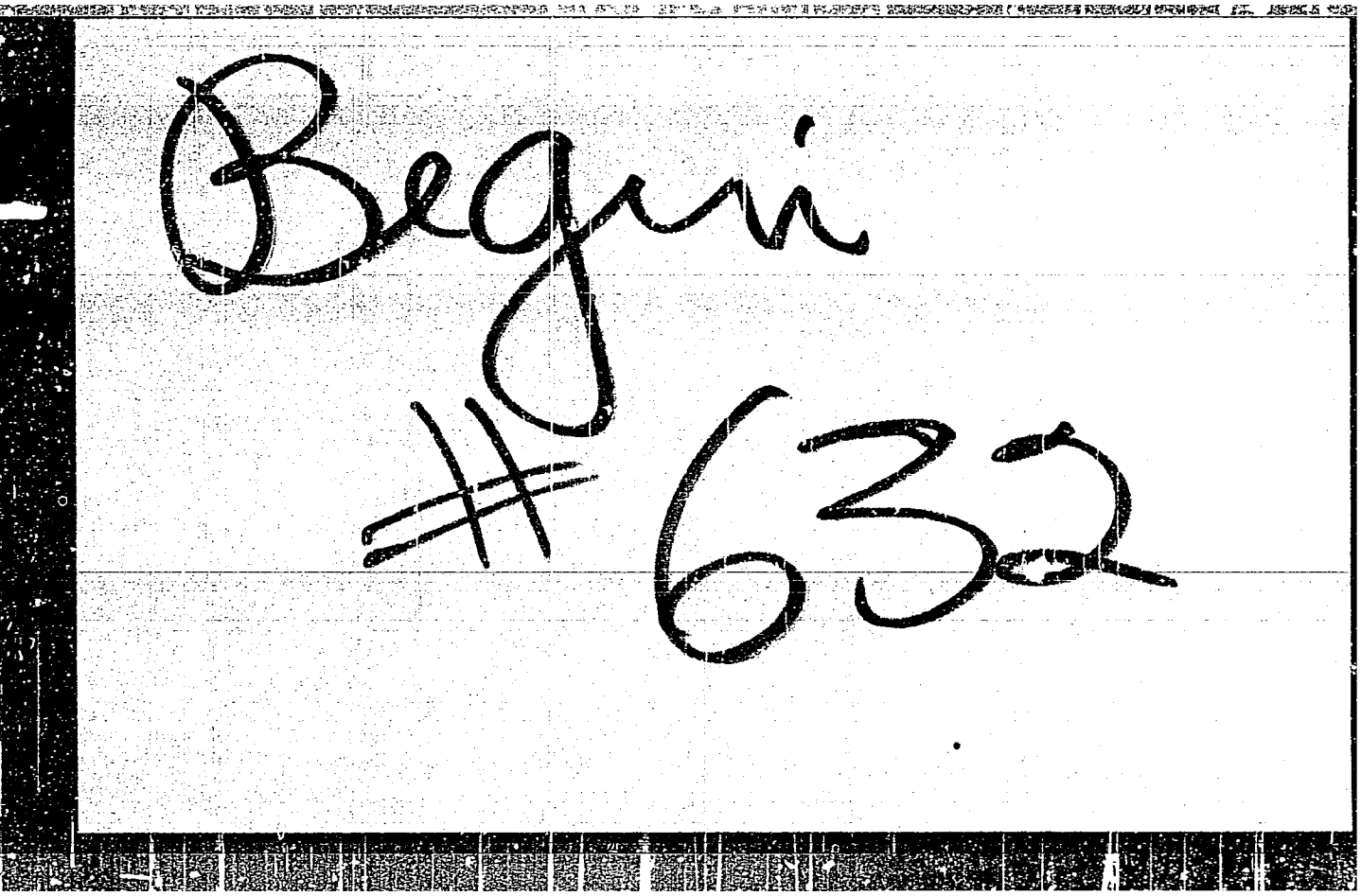


ACCESSION NR: AP4023394 S/0048/64/028/003/0489/0494

AUTHOR: Krinchik, G. S.; Tyutneva, G. K.

TITLE: Investigation of exchange and ferromagnetic resonances in ferrite-garnets by the magneto-optical method [Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May - 5 June 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 28, no. 3, 1964, 489-494

TOPIC TAGS: absorption, infrared absorption, electron transition, magneto-optics, ferromagnetic resonance, exchange resonance, magneto-absorption, Zeeman effect, Faraday effect, europium ferrite-garnet, dysprosium ferrite-garnet, terbium ferrite-garnet, ferrite-garnet

ABSTRACT: An earlier study (G. S. Krinchuk and M. V. Chetkin, Zhur. eksp. i teor. fiz. 41, 673, 1961) found that the 2.04 μ $^7F_0 - ^7F_6$ absorption line of Eu^{3+} in europium ferrite-garnet has a relatively simple structure because of the zero total angular momentum in the

Card 1/4

ACCESSION NR: AP4023394

ground state. The present paper describes the results of similar investigation of the absorption in the 3.25-μ region, which is identified with the $^7F_0 — ^7F_6$ transition in the Eu^{3+} ion. An IKS-12 spectrograph was employed with an LiF prism, which made it possible to realize a resultion of about 10 cm^{-1} (instead of the 40 cm^{-1} of the earlier study). The fact that the $^7F_0 — ^7F_4$ line is considerabley more intense than he $^7F_0 — ^7F_6$ line also favors bringing out fine structure. The specimens were 100-μ polished europium ferrite-garnet plates, cut parallel to the crystal axes with an accuracy to 7°. The light source was a globar. The light was modulated by a mechanical shutter at a frequency of 200 cps. The detector was a liquid nitrogen cooled PbS photoresistor coupled to an amplifier and recorder. The specimens were magnetized in a 2000-Oe field. The measurements were carried out with circularly polarized light in the case of longitudinal magnetization and plane polarized light in the case of transverse magnetization. The absorption curves for the different cases are reproduced in figures. The curves indicate that the transition in question is neither pure electric dipole nor pure magnetic dipole, for in no case is there observed the corresponding typical Zeeman splitting.

Card 2/4

ACCESSION NR: AP4023394

Analysis of the curves also indicates that the relative contribution ofelectric and magnetic dipole transitions varies, depending on the orientation of the magnetization vector relative to the crystal axes. In view of the separation between the line components it is inferred that the subsidiary lines evinced in the absorption curves are associated with excitation of collective vibrations of the spin system under the influence of the infrared radiation; the significance of this inference is explored. The first paper mentioned hypothesized that the frequency independent Faraday effect in the region above 4 μ is of purely ferromagnetic origin. To check this further, the present work measured the temperature dependence of the Faraday effect at 4.5 μ in 100-μ thick plates cut from dysprosium and terbium ferrite-garnets. These measurements were performed with the aid of an IKS-12 spectrograph with an NaCl prism. The polarizer was a germanium mirror and the analyzer a stack of AgCl plates. The Faraday effect was measured from room temperature down to about liquid nitrogen temperature (100°K). The results are presented in the form of curves and interpreted as substantiation of the above-mentioned hypothesis: the change in sign (slope) of the curves corresponds to a compensation point in the

Card 3/4

ACCESSION NR: AP4023394

respective materials. Finally, the present work measured the Faraday effect at the $^7F_0 - ^7F_4$ (3.25 μ) line by a procedure analogous to that employed in the earlier work for the $^7F_0 - ^7F_6$ (2 μ) line. The experimental results are given in the form of a curve, characterized by a resonance-like dip, and compared with the results of theoretical calculation of the wavelength dependence of the Faraday effect. A reasonably good fit is obtained by taking into account four components (two for each circular polarization), whereas in the case of the $^7F_0 - ^7F_6$ transition only two lines had to be taken into account. Orig. art. has; 2 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 10Apr64	ENCL: 00
SUB CODE: PH	NO REF SOV: 002	OTHER: 001

Card 4/4

FD-1593

USSR/Engineering - Metallurgy

Card 1/1 : Pub. 41-14/18

Author : Plaksin, I. N.; Khazhinskaya, G. N.; Tyurnikova, V. I.; Moscow

Title : Investigation of certain questions of the interaction of sulfide minerals with flotation reagents

Periodical : Izv. AN SSSR. Otd. tekh. nauk 8, 123-132, Aug 1954

Abstract : Uses radioactive isotopes for study of absorption of certain sulfide minerals (zinc blende, chalcopyrite, and pyrite) by collector reagents as follows: ethyl zanogenate (radioactive isotope S 35) and sodium diethyldithiophosphate (radicactive isotope P 32), in neutral and in calcium solution and also after preliminary processing of minerals with oxygen. Graphs; tables. Eight references.

Institution :

Submitted : July 10, 1954

TYURNIKOVA, V. I.

FD-3237

USSR/Chemistry - Metallurgy

Card 1/1 Pub. 41-18/22

Author : Bessonov, S. V., Plaksin, I. I., and Tyurnikova, V. I., Moscow

Title : On the Influence of Oxygen on the Floatability of Chalcopyrite in the Presence of Oleic Acid

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 7, 137-138, Jul 55

Abstract : Describes flotation (with argon) of chalcopyrite pulverized under agron and mixed 2:3 with quartz with 4:1 ratio of liquid: solids. Water used contained 0.16 and 36.0 milligrams of oxygen per liter (20°C); medium was neutral (pH=7.0, water) and alkaline (pH=9.0, addition of NaOH); reagents used were oleic acid and pine oil (5 grams per ton). Results given on graph and in table show definite influence of oxygen as activator. Four references, all USSR.

Institution : Institute of Mining, Acad Sci USSR

Submitted : 14 April 1955

Tyurnikova, V.I.

CA

AC

The effects of various gases on the flotability of chalcopyrite. S. V. Bessonov, I. N. Plaksin, and V. I. Tyurnikova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1955, No. 10, 127-30; cf. *C.A.* 50, 739a.—The effects of A, H, and CO_2 on chalcopyrite flotation were studied with tagged xanthate. With A, the extn. depends entirely on the O_2 concn. in the soln. H is not itself active in the flotation, but it interacts with O_2 and the extn. may be affected adversely if insufficient O is present. CO_2 is effective chiefly by lowering the pH. The acidity of the soln. favors the activation of the mineral surface, and the yield is high even when practically no O is present. O nevertheless plays an important role in flotation even in the presence of CO_2. The effects of the 3 gases are similar with other sulfide minerals, and the results confirm the predominating and substantial role of O_2 in the xanthate extn. of sulfide minerals. W. M. S.

(2)

TYURNIKOVA, V. I.

USSR/Minerals - Chemical technology

Card 1/1 Pub. 22 - 37/59

Authors : Plaksin, I. N., Memb.Corres.,Acad. of Sc., USSR; Bessonov, S. V.; and Tyurnikova, V. I.

Title : Reaction of xanthogenates with the surface of sulfide minerals

Periodical : Dok. AN SSSR 102/2, 331-333, May 11, 1955

Abstract : The results obtained during the flotation splitting of chalcopyrite and quartz in argon with the application of marked xanthogenates are described. The effect of oxygen and xanthogenates upon the surface of sulfide minerals is discussed. Two USSR references (1950-1954). Graphs.

Institution : Acad. of Sc., USSR, Inst. of Mining

Submitted : January 7, 1955

PLAKSIN, I.N. (Moskva); TYURNIKOVA, V.I.(Moskva).

Investigating the adhesion stability of xanthogenates on the surfaces of chalcopyrite grains. Izv.AN SSSR.Otd.tekh.nauk no.8:140-142 Ag '56. (MIRA 9:9)
(Chalcopyrite) (Flotation)

TYURNIKOVA, V.I.

Autoradiographic methods in the investigation of flotation reagents distribution on the surface of sulfide mineral particles. I. N. Plaksin, L. I. Starchik, and V. I. Tyurnikova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1957, No. 8, 187-9.—The different radiographic methods in use are discussed, and the Gomberg method, involving the formation of a 1-μ thick layer of highly sensitive emulsion upon the powd. sample was preferred because of its high sensitivity and resolving power. It offers, moreover, means for the observation of the surface structure of the minerals, higher speed (the exposure time being reduced from several days to 30 min. ... [illegible] ... graphic emulsion. W. M. Sternberg

AUTHOR: PLAKSIN,I.N., STARCHIK,L.P., TYURNIKOVA,V.I. PA - 3093

TITLE: The Autoradiographic Method and the Investigation of the Distribution of Flotation Reagents on the Surface of Small Particles of Sulfidic Minerals. (Metodika avtoradiografii pri issledovanii raspredeleniya flotatsionnykh reagentov na poverkhnosti chastits sul'fidnykh mineralov, Russian)

PERIODICAL: Izvestiia Akad. Nauk SSSR, 1957, Vol 21, Nr 3, pp 187 - 189 (U.S.S.R.)

Received: 6 / 1957 Reviewed: 7 / 1957

ABSTRACT: The wet autoradiographic method was employed in the investigation of the distribution of flotation reagents on the granules of copper and lead sulphides in the order of flotation with different but pronounced affinitive capacities. The best results were obtained by using platelets of organic glass (a 2% solution of the same in dichlorethane) and quartz (obtained by means of the sublimation of the quartz in a 10^{-4} mm Hg vacuum inside of 4 minutes). The experiments were carried out on galena from Khapcheranga (southeast of Baikal Sea on the Mongolian border) and on pyrite from Nizhniy Tagil (central Ural). The granularity came to -74 + 43 μ. The method used for the fixing of the reagent distribution on the surface of the minerals is characterized by great precision and especially because of the use of highly sensitive emulsion and great solubility power. The wet autoradiographic method substantially accelerates

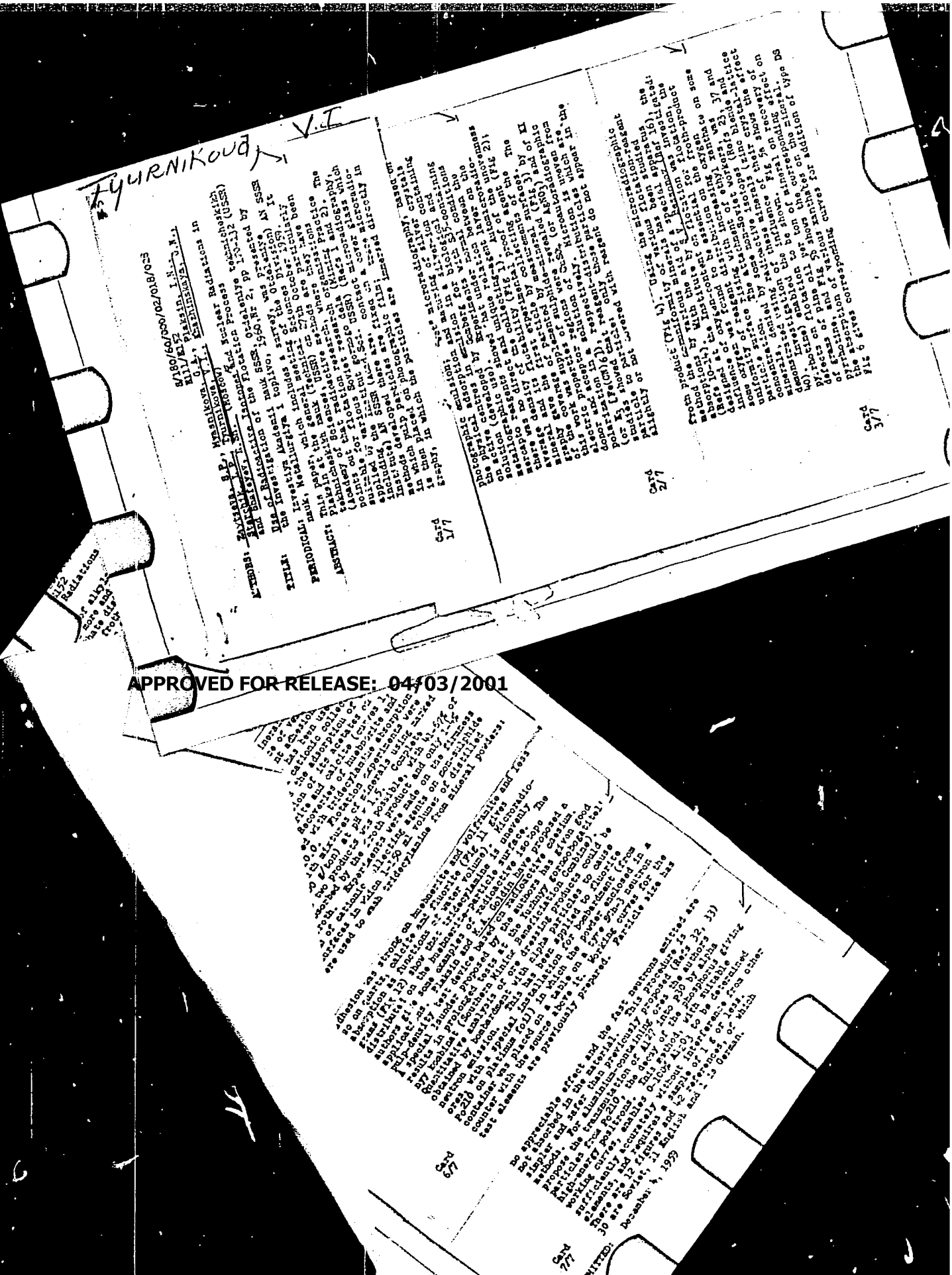
Card 1/2

The Autoradiographic Method and the Investigation of the Distribution of Flotation Reagents on the Surface of Small Particles of Sulfi. c Minerals. PA - 3093

the analysis and delivery of the photographs since the great sensitivity reduces the time of exposure from 24 hours to 30 minutes. The method also eliminates the possibility of a chemical interaction of the surface of the mineral, the adsorbing flotation reagent and the photographic solutions. By the use of completely thin emulsion layers (of the dimension order of 1 μ) it is possible to obtain autoradiograms which correspond pretty exactly to the real distribution of the flotation reagent.
(3 illustrations and 3 citations from Slav publications)

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: 30.10.1956
AVAILABLE: Library of Congress

Card 2/2



BARSKIY, Lev Abramovich; PLASKIN, Igor' Nikolayevich; TYURNIKOVA, Vera Ivanovna

[Complex treatment in the dressing of molybdenum ores] Kompleksnoe obogashchenie molibdenovykh rud. Moskva, Nedra, 1965. 198 p. (MIRA 18:4)

TYURIN, V.L.

Some problems related to the synthesis of electrical networks according to a given time characteristic of the group run-down. Elektrosviaz' 18 no.1:38-44 Ja '64. (MIRA 17:4)

PLAKSIN, I.N.; ZAYTSEVA, S.P.; MYASNIKOVA, G.A.; TYURNIKOVA, V.I.; KHAZHINSKAYA, G.N.; MAKARENKO, M.G., red. izd-va; VOLKOVA, V.V., tekhn. red.

[Use of radiiactive isotopes in studying flotation] Primenenie radioaktivnykh izotopov dlia issledovaniia protsessov flotatsii. Moskva, Izd-vo Akad. nauk SSSR, 1963. 97 p. (MIRA 16:5)

(Flotation) (Radioisotopes)

PLAKSIN, I.N.; TYURNIKOVA, V.I.; BARSKIY, L.A.

Investigating the effect of dispersing agents on the hydrolysis of sodium oleate. Dokl. AN SSSR 139 no.3:669-672 Jl '61. (MIRA 14:7)

1. Chlen-korrespondent AN SSSR (for Plaksin).
(Oleic acid) (Hydrolysis)

TYURYAKOV, V.G.; TSYPLAKOV, O.G.

The IZ-8925 pipe-cutting machine. Biul.tekh.-ekon.inform. no.3:25-27 '61. (MIRA 14:3)
(Pipe cutting)

BANSKIY, L.A. (Moskva); PLAKSIN, I.N. (Moskva); TYURNIKOVA, V.I. (Moskva)

Increasing the efficiency of hydroxyl collectors. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl., no.1:152-158 Ja-F '61. (MIRA 14:2)
(Flotation—Equipment and supplies)

PLAKSIN, I.N. (Moskva); TYURNIKOVA, V.I. (Moskva); CHAPLYGINA, Ye.M., (Moskva)

Effect of oxygen on the fixation and distribution of tridecanoic acid on fluorite surfaces during flotation. Izv.AN SSSR.Otd.tekh. nauk Met.i topl. no.1:78-81 Ja-F '59. (MIRA 12:6)
(Tridecanoic acid) (Fluorite) (Flotaion)

SOV/24-58-7-32/36

AUTHORS: Plaksin, I.N., Tyurnikova, V.I. and Tret'yakov, O.V.

TITLE: Distribution of Xanthates on the Surface of Sulphide Minerals in Relation to the Length of the Hydrocarbon Radical (Raspredeleniye ksantogenatov na poverkhnosti sul'fidnykh mineralov v zavisimosti ot dliny uglevodorodnogo radikala)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk, 1958, Nr 7, pp 146 - 148 (USSR)

ABSTRACT: The authors, in collaboration with L.P. Starchik, have developed a method of quantitative radiography. Using it (Ref 1) they have found that above a certain concentration of reagent on the mineral surface it is the distribution that affects flotation. The method is based on counting the number of developed silver particles on microradiograms of the mineral grains and of a standard. The reagent contains radioactive sulphur as a tracer. The standard is prepared by evaporation of a drop of aqueous xanthate solution, the resulting layer of radioactive reagent being covered with a protective layer. The quantity of reagent required to produce a grain of silver is calculated and used to deduce local reagent concentrations

Card 1/2

Distribution of Xanthates on the Surface of Sulphide Minerals in Relation to the Length of the Hydrocarbon Radical

on the mineral particles from silver-grain counts. For a quantitative measure of non-uniformity the authors have used the variational coefficient (Ref 3). They outline the determination of its value in the general case and for their experiments with ethyl, butyl and iso-amyl xanthates on zinc blende. The total adsorption of the reagents for oxygen concentrations in the solution of 0, 16, 10 and 36 mg/litre was also found. The tests covered a pH range of 7.0 - 12.5, the effect of lime being different for the different xanthates. Figures 1, 2, 3 show the values of the coefficient (%) of non-uniformity plotted against lime consumption (kg/ton) for ethyl, butyl and iso-amyl xanthates on sphalerite for various oxygen contents in the pulp. In all tests, ethyl xanthate was distributed more uniformly than butyl or isoamyl xanthates on the mineral surface. There are 3 figures, 2 tables and 5 Soviet references.

SUBMITTED: January 20, 1958

PLAKSIN, I.N. (Moscow); TYURNIKOVA, V.I. (Moscow); TRET'YAKOV, O.V. (Moscow)

Relationship between the distribution of xanthogenate on sulfide mineral surfaces and the length of the hydrocarbon radical. Izv. AN SSSR. Otd.tekh.nauk no.7:146-148 Jl '58. (MIRA 11:9)
(Flotation)

SOV/ 20-120-1-42/63

AUTHORS: Plaksin, I. N., Corresponding Member, Academy of Sciences, USSR, Tyurnikova, V. I.

TITLE: The Nonuniformity of Reagent Distribution in Sulphide Flotation (O neravnomernosti raspredeleniya reagenta pri flotatsii sul'fidov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 120, Nr 1, pp.155-157 (USSR)

ABSTRACT: The investigation of the influence exercised by the degree of nonuniformity in the reagent adsorbed on the surface of very fine particles (44 - 74 μ), on the results of flotation necessitated the elaboration of a special method of quantitative radiography. The method of wet micro-radiography (Ref 1) developed by the authors is based on counting the silver grains developed on samples and standards. The method is again described briefly. By counting these grains under a microscope the quantity of the reagent needed for the reduction of the silver grain on the standard is determined. The standards are prepared in consideration of the specific

Card 1/3

The Nonuniformity of Reagent Distribution in Sulphide Flotation

and chemical activity of the xanthogenate, the half-life and the coefficient of backscattering. Fig. 1 shows a typical standard and a chalcopyrite particle of the floating agent. The quantitative estimation of the attachment and distribution of the reagent on the mineral surface is carried out according to two indices: a) the calculation of the reagent quantity which has been adsorbed on one facet of the mineral grain and b) the variation coefficient determined by the method of mathematical statistics (Ref 2). By means of this method the interaction of the xanthogenates of various alcohols with chalcopyrite, galenite and sphalerite has been tested. The results are given in table 1. With a sufficient quantity of xanthogenates attached to the surface, the transition of the particle into the floating agent mostly depends on the degree of uniformity of reagent covering. If the reagent is only slightly adsorbed (as for instance with a high pH value) the probability of the grain getting into the floating agent is determined not so much by the distribution character of the reagent on the surface as by the quantity of the reagent attached thereon. Although further xanthogenate layers are formed, they do not add to the flotation. With a constant quantity of reagent adhering to the

The Nonuniformity of Reagent Distribution in Sulphide Flotation

metal the flotation depends on the nonuniformity of reagent distribution, as is shown in table 1. This influence of nonuniform distribution may cause a lack of clear relation between reagent adsorption and flotation ability of the reagent if the reagents are sufficiently concentrated. This was ascertained by radiometry (Ref 3). Therefore the increase of concentration of the xanthogenate beyond a certain value is inefficient as far as floatability is concerned. This has the same effect with varying oxide concentration in the liquid phase of the pulp (Table 2). The specific distribution of xanthogenates of various alcohols depends on the length of their hydrocarbon radical. There are 1 table, 2 microautoradiograms (on page 102), and 3 Soviet references.

SUBMITTED: December 24, 1957

1. Minerals--Flotation 2. Reagents--Adsorption
3. Reagents--Effectiveness 4. Radiography--Applications

TYURNIKOVA, V. I.

DUN NAY-LYAN' [Tung Nai-Lien]; PLAKSIN, I.N.; TYURNIKOVA, V.I. (Moskva).

Effect of oxygen on the interaction of sulfide minerals and xanthogenate in the presence of sodium sulfides. Izv. AN SSSR, Otd. tekh. nauk no.12:80-82 D '57. (MIRA 11:1)
(Sulfides) (Flotation) (Oxygen)

TYURNIKOVA, V.I.

24-12-18/24

AUTHORS: Nay-Lyan', Dun; Plaksin, I.N. and Tyurnikova, V.I. (Moscow).

TITLE: Influence of oxygen on the interaction of sulphide minerals with xanthogenate in presence of sodium sulphide. (Vliyaniye kisloroda na vzaimodeystviye sul'fidnykh mineralov s ksantogenatom v prisutstvii sernistogo natriya).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1957, No.12, pp.80-82 (USSR)

ABSTRACT: One of the least studied problems is the influence of dissolved oxygen on the operation of sodium sulphide during flotation. However, no direct results of measurements were published relating to the influence of dissolved oxygen on the interaction of collecting agents with minerals in presence of Na-S, using galenite of a grain size of 74 and 43 μ. earlier work (Ref.6) two of the authors of this paper established that change in the concentration of Na_2S influences the adhesion of xanthogenate on the galenite, as shown in the graph, Fig.1, p.81. The existence of a maximum was observed which is explained by certain initial oxidation of the galenite under consideration and is in good agreement

Card 1/2

Influence of oxygen on the interaction of sulphide minerals with xanthogenate in presence of sodium sulphide.

with results of technological experience relating to suppression of the galenite in the case of excess Na_2S; it can be seen from the graph that suppression of the flotation in the given case is due to reduced adhesion of the collecting agent on the mineral. Analogous experiments were made using predetermined doses of oxygen. The experiments and the results are briefly described and entered in the Table. These show that the same relations govern the effect of oxygen in presence of Na_2S as were established earlier by one of the authors and his team (Refs.9 and 10) for the interaction of sulphide minerals with the collector reagent.
There are 2 figures, 1 table and 10 references, all of which are Slavic.

SUBMITTED: July 18, 1957.

AVAILABLE: Library of Congress.

TYURNIKOVA, V.I.

PLAKSIN, I.N.; ZAYTSEVA, S.P.; STARCHIK, L.P.; TRET'YAKOV, O.V.; TYURNIKOVA, V.I.; SHAFEYEV, R.Sh.

Studying the reaction of reagents and minerals in flotation by the microautoradiographic method. Zav. lab. 23 no.3:313-316 '57. (MLRA 10:6)

1. Institut gornogo dela Akademii nauk SSSR.
(Radiography) (Flotation)

SHILKIN, P.M.; ZEL'VYANSKIY, Ya.A.; SIBAROV, Yu.G.; KUSTOV, V.M.; TSYKHMAN. A.I.; KUVSHINOV, M.I.; SHIPAREV, Yu.A.; TYURNIN, G.A.; AVSTREYKH, L.D.; BAKANOV, N.N.; KHITROV, P.A., tekhn. red.

[Safety engineering regulations for operating the contact networks of d.c. electrified railroads]Pravila tekhniki bezopasnosti pri ekspluatatsii kontaktnoi seti postoiannogo toka elektrifitsirovannykh zheleznykh dorog. Moskva, 1962. 128 p. (MIRA 15:7)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye elektrifikatsii i energeticheskogo khozyaystva. 2. Zamestitel' nachal'nika tekhnicheskogo otdela TsE Ministerstva putey soobshcheniya (for Shilkin). 3. Technicheskiy otdel TsE Ministerstva putey soobshcheniya (for Zel'vyanskiy). 4. TSentral'nyy komitet profsoyuza rabochikh zheleznodorozhnogo transporta (for Sibarov). 5. Nauchno-tekhnicheskiy sovet Ministerstva putey soobshcheniya (for Kustov). 6. Sluzhba elektrifikatsii i energeticheskogo khozyaystva Odesskoy zheleznoy dorogi (for TSykhman). 7. ECh Yuzhno-Ural'skoy zheleznoy dorogi (for Kuvshinov). 8. ECh Moskovskoy zheleznoy dorogi (for Segala, Shiparev, Tyurnin). 9. EChK Oktyabr'skoy zheleznoy dorogi (for Avstreykh). EChK Moskovskoy zheleznoy dorogi (for Bakanov). (Electric railroads--Safety regulations)

TYURNINA, A.T.

TYURNINA, A.T., insh.

Softening slightly mineralized water. Energetik 5 no.10:11-12 O '57. (MIRA 10:12)
(Water--Softening)

KOLOINOV, S.Sh.; YEROSHENKO, Ye.G.; ZHUZGOV, L.N.; PUSHKOV, N.V.; TYURMINA, L.O.

Magnetic measurements with the second cosmic rocket. Isk. sput.Zem., no.5:16-23 '60. (MIRA 13:5)
(Lunar probes) (Magnetic measurements)

TYURING, A.

Tyuring, A. [Turing]. Rounding-off errors in matrix processes. Uspehi Matem. Nauk (N.S.) 6, no. 1(41), 138–162 (1951) (Russian)
Translated from Quart. J. Mech. Appl. Math. 1 287–308 (1948).

Source: Mathematical Reviews, Vol 12 No. 10

TYURINKOV, S.

Dairying

"Work methods of master F. Ya. Zakharov." Mol. prom. 13, no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress October 1952 UNCLASSIFIED

TYURKISHER, R. I.

Turkisher, R. I. Calculation of the field of a point source in the presence of a sloping layer. Akad. Nauk SSSR Trudy Inst. Teoret. Geofiz. 1, 1? 142 1946. (Russian)

Perfor[illegible]ing a [illegible] [illegible] the [illegible] reviewer above: routine work with [illegible]

F. K[illegible]belliana (New York, N. Y.).

Source: Mathematical Reviews, [illegible] Vol. [illegible] No. [illegible]

TYURKISHER, fnu

Inst. for Theoretical Geophysics, Acad., Sci., Polucheno, (-1942-)

"The Influence of an Intermediate Layer in Vertical Electric Soundation,"

Iz. Ak. Nauk SSSR, Ser. Geograf. i Geofiz., Nos., 1 - 6, 1942

TYURMENKO, G. A.

USSR/Cultivated Plants - Grains.

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39211

Author : Mosyuk, M.F., Tyurmenko, G.A.
Inst : -
Title : The Influence of Lupine Fodder on the Increase of Winter Rye Crops and on Soil Fertility.

Orig Pub : Zemledeliye, 1957, No 6, 40-44.

Abstract : The growth of surface and subsurface masses as well as their P, K and N contents was determined in field experiments at the Cheraigov agricultural experiment station. The experiments were conducted at various times when lupine is gathered for green fodder, for ensilage, for seeds and for plowing in as green manure. The surface dry lupine mass grows from 36 cwt/ha in its blossoming phase up to 106 cwt/ha when fully ripe, and the subsurface dry mass diminishes from 17 to 14 cwt/ha. The root greatest mass

Card 1/2

USSR/Cultivated Plants - Grains.

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39211

is situated at a depth of 0 - 20 cm. An accumulation of N (from 109 kg during the blossoming phase up to 260 kg when it is fully ripe) is noticed in the surface part, and the quantity of N in the roots diminishes from 56 during the blossoming phase down to 8 kg when fully ripeness is achieved. The same relationship is observed in the accumulation of P and K. 1.32 cwt of tubers are accumulated in an area of 1 ha at a depth of 0 - 20 cm, containing up to 6 kg of N, 1.3 kg of P and 26 kg of K. Experiments were conducted on the influence of various methods of utilizing lupine on the harvest of a subsequent crop of winter rye. The highest yield of winter rye (12.4 cwt/ha) was obtained by plowing in bitter lupine as green manure, and 11.6 cwt/ha were obtained by the plowing in lupine fodder. -- I.N. Zaikina

Card 2/2

SOV/112-57-6-13162

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 6, p 216 (USSR)

AUTHOR: Tyurmorezov, V. Ye., Pashentsev, I. D.

TITLE: Delay in the Stabilization Systems of the Power Supply of Electric-Communication Outfits (Inertsionnost' sistem stabilizatsii elektropitayushchikh ustanovok svyazi)

PERIODICAL: Sb. Leningr. in-ta inzh. zh.-d. transp., 1956, Nr 151, pp 247-260

ABSTRACT: Transport-communication equipment requires power-supply rectifiers with a stabilized output. A high-speed feature is one of the criteria used for selecting the type of equipment. From this standpoint, the possibility is considered of using equipment with magnetic-amplifier automatic control, specifically, the equipment for a type BCC-51 rectifier. The circuit in question is a cascade connection of an external-backfeed magnetic amplifier and a power choke coil. It is assumed that the choke coils operate within the linear parts of their characteristics and that the operating current of the second amplifier accurately follows the control current. This expression is derived for the control current in the second choke coil:

Card 1/2

Delay in the Stabilization Systems of the Power Supply of Electric-Communication . .

$$i'_y = (I_{pl} - I_{ol}) \left[1 - \left(1 - \frac{\tau_2}{\tau_2 - \tau_1}\right) e^{-t/\tau_1} - e^{-t/\tau_2} \frac{\tau_1}{\tau_1 - \tau_2} \right]$$

where I_{pl} is the steady-state average value of the current of the first amplifier; I_{01} is the same at no-load; τ_1 and τ_2 are time constants of the stages. It is noted that according to the analysis of the above expression, the overall delay of the cascade connection is equal to the delay of the choke coil with the greater time constant. If $\tau_1 = \tau_2$, the time constant of the circuit is greater than that of the choke coil. The delay of BCC-51 is about 0.2-0.4 sec, as determined from the above formula. Formulae for determining τ_1 and τ_2 are also presented.

I.I.R.

TYURKISHER, fnu.

Inst. for Theoretical Geophysics, Acad., Sci., Polucheno, (-1942-)

"The Influence of an Intermediate Layer in Vertical Electric Soundation,"

Iz. Ak. Nauk SSSR, Ser. Geograf. i Geofiz., Nos., Nos. 1 - 6, 1942.

TYURKISHER, P. I.

"Calculating the fields of a Point Source Located Above an Inclined Stratum".
Trudy In-ta Teoretich Geofiziki, Vol 1, 1946 (137-142).
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

TYURKISHER, R. I.

Inst. for Theor. Geophysics, Acad. of Sci., (-1943-)

"On the problem of vertical electrical sounding,"

Iz. AK. Nauk SSSR, Ser. Geograf. i Geofiz., No. 1-6, 1944.

TYURKISHER, R. I.

Institute of Theoretical Geophysics, Acad. of Science, (-1945-)

"Electrical Coring in an Anisotropic Medium,"

Iz. Ak. Naud SSSR, Ser. Geograf. i Geofiz., No. 3, 1945

TYURKISHER, R. I.

Inst. for Theor. Geophysics, cad. of Sci., (-1943-)

"On the problem of vertical electrical sounding,"

Iz. AK. Nauk SSSR, Ser. Geograf. i Geofiz., No. 1-6, 1944.

TYURKISHER, R. I.

Institute of Theoretical Geophysics, Acad. of Science, (-1945-)

"Electrical Coring in an Anisotropic Medium,"

Iz. Ak. Naud SSSR, Ser. Geograf. i Geofiz., No. 3, 1945

TYURKISHER, R. I.

"Calculation of the Field of a Point Source Located Over an Inclined Seam," pp 137-142, Abstracts from 'Works of the Inst. of Theoreteical Geophysics, Vol., 1946.

U-1444, 28 Aug. 51

DAVYDOV, M.P.; TYURKYAN, R.A.; RAKOV, I.L.

How 241 meters of completed shaft were sunk in one month.
Shakht.stroi. no.5:25-28 My '57. (MIRA 10:7)
(Shaft sinking)

TYURKYAN, R.A.

Use of biomycin in acute dysentery in infants. Pediatriia no.4: 33-37 Jl-Ag '54. (MLRA 7:10)

1. Iz kafedry pediatrii (zav. deystvitel'nyy chlen AMN SSSR prof. G.N.Speranskiy) TSentral'nogo instituta usovershenstvovaniya vrachey (dir. V.P.Lebedev) na baze detskoy bol'nitsy imeni F.E.Dzerzhinskogo (glavnyy vrach A.N.Kudryashova)

(CHLORTETRACYCLINE, therapeutic use, dysentery, bacillary, in inf.)
(DYSENTERY, BACILLARY, in infant and child, ther., chlortetracycline)

TYURMOREZOV, V.Ye., inzhener; PASHENTSEV, I.D., kandidat tekhnicheskikh nauk, dotsent.

Inertness of systems stabilizing power supply installations for communication. Sbor.LIIZHT no.151:247-260 '56. (MLRA 10:1)
(Electric current rectifiers)

TYURNIKOV, S.

Dairying

"Work methods of master F. Ya. Zakharov." Mol. prom. 13, no. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952 ~~1953~~, Uncl.

TYURNIKOV, S.

USSR (600)

Zakharov, F. Ya.

Work methods of master F. Ya. Zakharov Mol prom. 13 No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1953, Uncl.

TYURNIN, S.P.

From practices in polishing nitrocellulose lacquer coatings.
Der. prom. 14 no.2:23 F '65. (MIRA 13:6)

Name : TYURNIN, V.

Title : Engineer-Lt. Colonel, Candidate of Technical Sciences

Remarks : V. Tyurnin in an article entitled "Guided Missiles--Atomic Warhead Carriers" notes the advantages of missiles over bomber aviation using US missiles, such as the Snark, as examples.

Source : N: Krasnaya Zvezda, No. 9, 11 January 1957, p. 3, c. 1-6

TYURNIN, V.

"Guided Aviation Bombs" ar. article in the publication Problems of the Use of Atomic Energy. October, 1956, Moscow

TYURTYUBEK, I.I.; MASHONIN, P.A., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor.

[Organization of tool room management] Organizatsiia instrumental'nogo khoziaistva. Moskva, Gos. transp. zhel-dor. izd-vo, 1954. 126 p. [Microfilm] (MLRA 7:11)

(Machinists' tools)

TYUBEK, I. I.

N/5
741.41
.T9

Organizatsiya instrumental'nogo khozyaystva (Organization of tool room management) Moskva, Transzheldorizdat, 1954.
126 p. illus., diagrs., tables.
"Literatura": p. (125)

TYURYAKOV, A.F.; KUKHRANOVA, G.M.; TARUBAROV, I.G.; ZABELYSHINSKIY, I.M.; DERGUNOVA, A.A.; KLEYNERMAN, D.A.

Results of administrative and economic activity in nonferrous metal industries in 1957; from annual reports. Biul. TSIIN tsvet. met. no. 7:30-36 '58. (MIRA 11:7)
(Nonferrous metal industries)

TYURYAKOV, A.F., insh.

Construction of nonferrous ore mining enterprises during 1959-1965.
Shakht.stroi. no.3:6-9 Mr '59. (MIRA 12:4)
(Mining Engineering) (Nonferrous metals)

GRISHIN, G.T., gornyy inzh.; TYURYAKOV, A.F., gornyy inzh.; BOGOMOLOV, V.I.

Continuously improve the technical and economic indices of mine operations. Gor. zhur. no.5:3-5 My '64. (MIRA 17:6)

1. Sovet narodnogo khozyaystva SSSR (for Tyuryakov).
2. Gosplan SSSR (for Bogomolov).

SOV-127-58-10-4/39

AUTHORS: Mizernitskiy, L. A. and Tyuryakov, A. F., Mining Engineers

TITLE: Open-pit Works in Mines of the Lead and Zinc Industry (Otkrytyye raboty na rudnikakh svintsovo-tsinkovoy promyshlennosti)

PERIODICAL: Gornyy zhurnal, 1958, Nr 10, pp 13-18 (USSR)

ABSTRACT: The open-pit extraction of lead-zinc ores was developed between 1951 - 1957. At present the following mines are exploited by open-pit working: the Kurgashinkanskiy and Altyn-Topkanskiy mines of the Tashkent Sovnarkhoz; the Buurdinskiy, Kanskiy, and Sumsarskiy mines of the Kirghiz Sovnarkhoz; the Andreyevskiy and Zyryanovskiy mines of the East-Kazakhstan Sovnarkhoz; the Karagaylinskiy, Kayraktinskiy, Gul'shadskiy, and Kaskagyr-Akdzhal'skiy Mines of the Karaganda sovnarkhoz and the Tary-Ekanskiy mine of the Tadzhik Sovnarkhoz. A total of 19.3% of the entire lead-zinc ore production was done by this method. The increase in the production of these mines contributed to the sharp decrease in the cost of production and preparatory stripping work. As all these mines are situated in different surroundings, (some of them high up in the mountains), various types of drilling rigs, excavators and dump trucks are used.

Card 1/2

Open-pit Works in Mines of the Lead and Zinc Industry SOV-127-58-10-4/29

In general, dump trucks are used for the transportation of the extracted ore and stripping rocks in all the mines, except the Kurgashinkanskiy mine, where rail transport is also used. Frequent break-downs of trucks, shortage of stand-by trucks, small load capacity and shortage of spare parts very often reduce mine output. There are 5 tables.

1. Mining industry--USSR 2. Lead ore--Production
3. Zinc ore--Production 4. Ores--Handling

Card 2/2

TYURYAKOV, A.F.

Technical and economical results of the operations of lead-zinc mines in 1957. Biul.TSIIN tsvet.met. no.10:32-39 '58. (MIRA 11:9)
(Lead mines and mining--Statistics) (Zinc mines and mining--Statistics)

TYURYAKOV, A.F

REVAZOV, A.D., gornyy inzhener.; TYURYAKOV, A.F., gornyy inzhener.

Stripping the Altyn-Topkan open pit by large-scale blasting. Gor. zhur. no.1:44-47 Ja '57. (MLRA 10:4)

1. Glavtsinksvinets i Ministerstvo tsvetnoy metallurgii SSSR. (Altyn-Topkan--Strip mining) (Blasting)

TYURYAKOV, A.F., gornyy inzh.

Collective of Mirgalimsay Mine works for technical progress. Gor. zhur. no.3:7-9 Mr '62. (MIRA 15:7)

1. Gosplan SSSR.
(Mirgalimsay region--Mining engineering)

IVURYAKOV, B.I.

Regionalization of the North Atlantic based on the structural similarity of water masses. Trudy Len. gidrometeor. inst. no.37 '64.

Calculation of wind currents in the North Atlantic. Ibid.:38-50

(MIRA 18:6)

Tyuryakov, B. I.

Tyuryakov, B. I., Towards the problem of calculating refraction distances of echo-sounding, Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), No 5-6, 1956, p 129-145; RZhGeofiz 8/57-7686)

[illegible], B. I.

Tyuryakov, B. I., Romanov, Yu. A., Lamanov, V. I., Simplification of formulas for calculating refraction distances of echo-sounding at sea, Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), No 5-6, 1956, p 146-159; (RZhGeofiz 8/57-7685)

TYURYAKOV, B. I.

TIMONOV, V., V., TYURYAKOV, B. I., ZHUKOV, L. A.,

"Studies of the year-by-year variations of the state of the ocean-atmosphere system in the North Atlantic"

Report to be submitted for the 13th General Assembly, Intl. Union of Geodesy and Geophysics (IUGG), Berkeley Calif., 19-31 Aug 63

TYURYAKOV, S. V.

"The Method of Finite Differences in the Problem of Eigenvalues for a System of Ordinary First Order Linear Differential Equations." Cand Phys-Math Sci, Moscow State Pedagogical Inst imeni V. I. Lenin, Moscow 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

TYURYAKOV, V.G.; TSYPLAKOV, O.G.

Equipment for milling machines. Mashinostroitel' no.9:24 S '62. (MIRA 15:9)

(Milling machines—Attachments)

TYURYAKOV, V.G.; TSYPLAKOV, O.G.; RAYKHENSHTEYN, I.TS., red.; GRIGOR'YEVA, I.S., red. izd-va; BELOGUROVA, I.A., tekhn.red.

[Machining of thermoplastics and rubber in small-batch and unit production] Mekhanicheskaia obrabotka termoplasticheskikh plastmass i reziny v usloviiakh melkoseriinogo i edinichnogo proizvodstva. Leningrad. 1963. 22 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Mekhanicheskaia obrabotka metalla, no.6) (MIRA 16:5)
(Thermoplastics) (Rubber) (Plastics cutting)

TYURYAKOV, Vasiliy Georgiyevich; VERZHBINSKAYA, I.I., inzh., red.; FREGER, D.P., red. izd-va; GVIRTS, V.L., tekhn. red.

[Finishing press working of cylindrical holes and planes practices of the Izhorsk Plant] Chistovaia obrabotka davleniem tsilindricheskikh otverstii i ploskostei; opyt Izhorskogo zavoda. Leningrad, 1961. 10 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Mekhanicheskaia obrabotka metallov, no.10) (MIRA 14:7)

(Metals—Finishing)

T'YUR'YAYEV, I.P.

SCHEGLOVA, A.P.

SCHEGLOVA, A.P., BOGDANOVA, O.K., BALANDIN, A.A., T'YUR'YAYEV, I.P., VINNIK, I.F.,

Kinetics of dehydrogenation.

Report presented at the 12th Conference on high molecular weight compounds devoted to monomers, Baku, 3-7 April 62

TYURYAYEV, I. Ya.

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis. B-9

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3905.

Author : I. Ya. Tyuryayev, A.N. Bushin, R.K. Mikhaylov, Ye. A. Sarycheva.
Inst :
Title : Speed of Catalyst Carbonization at n-Butane Dehydrogenation.

Orig Pub: Zh. fiz. khimii, 1957, 31, No 1, 93-99.

Abstract: The carbonization speed of aluminochrome oxide catalyst (in the shape of half and quarter pellets about 6 mm in dia) was studied in the reaction $C_4H_{10} \rightarrow C_4H_8$ at 510 to 600°, at volume speeds of 400 to 2560 hour^{-1} and at the cycle duration of 3 to 68 min. It was found that under the conditions of the experiment, the amount of deposited carbon determined by the amount of CO_2 liberated at the catalyst regeneration does not almost depend on the volume speed and the catalyst grain size. The

Card : 1/2

5(3),5(1)
AUTHORS: Bushin, A. N., Soldatov, B. Ya., Tyuryayev, I. Ya., Troitskaya, T. M., Gurina, P. S.

SOV/64-58-7-5/18

TITLE: The Dehydrogenation of n-Butane on a Semiindustrial Plant With Movable Spherical Catalyst (Degidrirovaniye n-butana na polupromyshlennoy ustanovke s dvizhushchimsya sharikovym katalizatorom)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 7, pp 406-409 (USSR)

ABSTRACT: This type of dehydrogenation was proposed by the Giprokauchuk. In the beginning of the investigations I. L. Fridshteyn participated. The investigation results of the dehydrogenation of n-butane to butylene (first stage of the two-stage method of producing the divinyl) as well as of the dehydrogenation of other paraffin hydrocarbons (propane, isobutane, isopentane) are given. The investigations were carried out in the tube reactor with immovable catalyst and an indirect heat supply (of smoke gases) as well as in the system with movable spherical catalyst with the circulating catalyst acting as heat transfer. The second technique was found to be more favorable and the single disadvantage is mentioned that the circulating granulated catalyst must have a higher

Card 1/2

The Dehydrogenation of n-Butane on a Semiinstrial Plant With Movable Spherical Catalyst

SOV/64-58-7-5/18

mechanical strength. Experiments with bucket, pneumatic and automatic tray elevators showed that for transporting K-3 and K-5 catalysts automatic tray elevators are best. The reactor and regenerator (Diagrams) of the plant were produced from [illegible] steel. The best results were obtained in the system with the movable catalyst K-5 at the following conditions: The rate of passage of butane 170-190 normal-m^3 per 1 m^3 catalyst per hour (temperature of butane 200°); rate of circulation of the catalyst 8.5 kg/1 kg butane; temperature of the catalyst 610-620°; temperature of the contact gas prior to its entrance into the reactor 590-600°. The experiments carried out for the dehydrogenation of propane, isobutane and isopentane on the plant described with the catalyst K-5 were carried out with [illegible] Makhina participating in some of them. The experimental results are given in a table and show that high yields of the corresponding olefins can be obtained. There are 3 figures, 2 tables, and 5 Soviet references.

Card 2/2

SOV/65-58-12-3/16

AUTHORS: Tyuryayev, I. Ya; Mukhina, T. N; Pavlova, V. B. and Kolyaskina, G. M.

TITLE: The Reaction Rate During Dehydrogenation of Propane on a Stationary Catalyst (Skorost' reaktsiy pri degidrirovanii propana na nepodvizhnom katalizatore)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr 12, pp 9 - 15 (USSR)

ABSTRACT: During the catalytic dehydrogenation of propane, a number of side reactions take place which lead to the formation of methane, ethylene, ethane and a small quantity of C_4 hydrocarbons, as well as to the formation and deposition of coke on the catalyst. This reduces the yield of propylene and decreases the activity of the catalyst. It is necessary to know the reaction rates of the basic and side reactions as the rate of the basic reaction determines the yield of propylene during one throughput, and the rate of the side reactions the yield of propylene on the decomposed propane. The catalytic dehydrogenation of propane can be described by three reactions: dehydrogenation, cracking and coke formation. The kinetics of dehydrogenation of the lower paraffins has been described by many authors (Refs. 3 - 7), and the kinetics of thermal and catalytic cracking of

Card 1/3

The Reaction Rate During Dehydrogenation of Propane on a Stationary Catalyst

hydrocarbons was also investigated (Ref.1 and 9). The rate of coke formation on an aluminium-chrome catalyst was investigated during the dehydrogenation of n-butane. Propane was catalytically dehydrogenated in a quartz reactor (diameter equals 22mm). The temperatures were registered on the potentiometer PP. The catalyst granules had a diameter of 1 mm. 10 cm^3 of catalyst was used. The rates of dehydrogenation and cracking were defined at 550, 570 and 590°C when using practically pure propane, & the rate of coke deposition in a second series of experiments at 570, 580, 590, 600 and 610°C when using 94.9% propane. The dehydrogenation and cracking experiments were carried out for thirty minutes. The gas was analysed on a GIAP instrument and on a TsIATIM-51V device. During these experiments at decreased partial pressure, purified nitrogen was used as diluent. Results on the dehydrogenation of propane at atmospheric pressure are given in Table 1, and all further data necessary for calculating the coefficients of the kinetic equations in Figs.1, 2 and 3. Table 2: data for the graphical determination of the coefficients and values of these coefficients.

SOV/65-58-12-3/16

The Reaction Rate During Dehydrogenation of Propane on a Stationary Catalyst

Equations for calculating the rates of dehydrogenation, cracking and carbon deposition during the dehydrogenation of propane are given, as well as the dependence of the coefficients of these equations on the temperature. These equations form the basis for calculating the yields of propylene with regard to propane (for one cycle), with regard to the decomposed propane, and also the poisoning of the catalyst during various process conditions. There are 4 Figures, 2 Tables and 10 References: 4 English and 6 Soviet.

ASSOCIATION: NIISS

Card 3/3

SOV/64-59-3-4/24

5(1)
AUTHORS: Tyuryayev, I. Ya., Mukhina, T. N., Bushin, A. N., Gurina, P. S.

TITLE: Catalytic Dehydration of Propane Under Semi-industrial Conditions (Kataliticheskoye degidrirovaniye propana v polupromyshlennykh usloviyakh)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 3, pp 15 -16 (USSR)

ABSTRACT: Propylene, necessary for the synthesis of poly-propylene, glycerin, washing agents, and others, can be produced by means of a catalytic dehydration of propane, although a corresponding industrial production method is not yet worked out. Laboratory experiments in the NIISS showed that industrial catalysts used for butanhydration could also serve for propanhydration, with the output of propylene corresponding to the output of butylene in the first reaction. The optimum conditions and the output achieved in both cases of dehydration, are given (Table 1), both types of catalysts were developed in the institut imeni L. Ya. Karpova (Institute imeni L. Ya. Karpov), respectively in the VNIISK. The test results of the propanhydration achieved with a device already described, are given (Ref 1). The latter served for the dehydration of n-butane into butylene on movable

Card 1/2

Catalytic Dehydration of Propane Under Semi-industrial Conditions SOV/64-59-3-4/24

ball catalysts (reactor diameter 500 mm, height of the catalyst layer appr. 1450 mm, volume - 270 l). The used gas had the following composition : 0.7 wt% of C_3H_6, 98.5 wt% of C_3H_8, 0.8 wt% of C_4. Datas on the catalyst activity are given, and also some test results with a better output (Table 3). The average of the heat effect of the dehydration reaction was found by means of 562 kcal/kg of the decomposed propane. A comparison is given (Ref 3) of the propylene output with that of butylene. It was found that it is possible to carry out the propanhydration on the same device as the n-butanhydration. There are 4 tables and 1 Soviet reference.

Card 2/2

SOV/65-59-8-5/17

AUTHORS: Barabanov, N.L., Tyuryayev, I.Ya. and Mukhina, T.N.

TITLE: The Rate of Reaction during the Pyrolysis of Ethane

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1959, Nr 8, pp 19-22 (USSR)

ABSTRACT: The pyrolysis of ethane proceeds in the form of three reactions (Ref 4 - 8); the dehydrogenation and cracking of ethane and the decomposition of ethylene; the stoichiometric equations for these reactions are given (Formulae 1 and 2). The ethane was pyrolised in a quartz reactor whilst using a continuous process. Results obtained by chromatographic analysis of the pyrolysed gas are given (Table 1). The reaction rate during the decomposition of ethane can be expressed by a first order equation according to A.I.Dintses and A.V.Frost (Ref 9). The coefficient of inhibition β equalled 0.94; the rate constant was found to depend on the temperature. The total rate of decomposition increases only slightly when the reaction period varies between less than 0.5 to 0.7 sec; it reaches a maximum and then decreases due to the lowering of the ethane concentration (Fig 1). A certain

Card 1/2

The Rate of Reaction During the Pyrolysis of Ethane

induction period can be observed during the dehydrogenation of ethane. The inhibition coefficient during the cracking reaction was found to be 0.88 . The dependence of the coefficient of rate of cracking on the temperature is shown in the form of a graph (Fig 2) as well as that of the coefficient of total decomposition of ethylene on the temperature in Fig 3. A stoichiometric equation for the total decomposition process (at 800°C) is calculated. This data can be used for estimating the parameters of tubular reactors (Ref 3 to 13). There are 3 figures, 1 table and 12 references, 4 of which are Soviet, 7 English and 1 German.

Card 2/2

5 (1), 5 (3) SOV/153-2-5-28/31

AUTHOR: Tyuryayev, I. Ya.

TITLE: Development of the Fundamentals for an Industrial Process of Dehydrogenation of Paraffin Hydrocarbons

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol. 2, Nr 5, pp 797 - 802 (USSR)

ABSTRACT: The knowledge of the rate of reactions which occur in catalytic dehydrogenation of propane and n-butane on industrial catalysts, and the peculiarities of the process which are connected with the type of reactor, are essential when designing industrial plants. The author studied these rates in a laboratory flow equipment with a quartz reactor (20 mm in diameter) on an immobile catalyst layer. The results concerning n-butane are published for the first time in the present paper, those concerning propane were published earlier (Ref 8). Table 1 gives part of the results on the catalyst of the institut im. Karpova (Institute imeni Karpov) at atmospheric pressure. It was established that the dehydrogenation process may be described by 4 reactions: dehydrogenation, hydrogenation, cracking and coal sedimentation. From all these, one can calculate with satisfactory accuracy the olefine yield per passage and the selectivity of the process (Refs 6,8). From

Card 1/3

data of table 1 and similar data at reduced pressure (Ref 9) they established the values of the constants in the equation of the dehydrogenation rate (1), and those of the cracking. The data concerning the coal sedimentation in the dehydrogenation of n-butane were earlier discussed (Ref 7). The equations derived are suitable for the calculation of the reactions with an immobile or with a compact mobile layer of catalysts. Most favorable is the knownmethod of gradual integration. The author discusses three types of reactors: 1) without heating from outside, with a suspended boiling layer of fine granular catalyst, 2) as 1, but with a compact layer of mobile spherical catalyst, and 3) reactor of the tube type with heating from outside and an immobile catalyst. Equipments with reactors of type 2) and 3) are illustrated in figures 1 and 2. Reactor type 1): the qualitative influence of hydrodynamic conditions were studied together with T. N. Mukhina and G. F. Lesokhina on the sample of propane dehydrogenation. Figure 3 shows the data concerning the influence of the volume- and linear velocity on the propylene yield per passage besides giving a theoretical curve of the yield in the case of an ideal mixing of the gas. It can be

Development of the Fundamentals for an Industrial Process of Dehydrogenation of Paraffin Hydrocarbons SOV/153-2-5-28/31

observed that the yield is higher in the reactor of type 3). Table 2 illustrates the influence of the height of layer of the catalyst on the yield of propylene. Reactor of type 2): there are several conditions which favor a high yield. In the reactor of type 3) the dehydrogenation cycle lasts 1-3 hrs. The authors investigated the dehydrogenation of n-butane (Ref 9). The yields were relatively low and, besides, the activity of the catalyst decreased constantly. Therefore the reactor of type 2) with counterflow is most efficient. The following names are mentioned in the article: A. A. Balandin, S. Ya. Pshezhetskiy and G. D. Lyubarskiy, R. D. Obolentsev. There are 3 figures, 2 tables, and 10 references, 9 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK (Scientific Research Institute of Monomers for Synthetic Rubber)

Card 3/3

S/080/60/033/008/016/022/XX
D213/D305

AUTHORS: Tyuryayev, I.Ya., and Tsaylingol'd, A.L.

TITLE: Quantitative characteristics of fluidized layer reactors in respect of mixing solid particles

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 8, 1960, 1783 - 1790

TEXT: Mixing of solid particles was studied quantitatively in "cold" models with apparatus diameters of 26, 34, 43 and 135 mm. The distributing screen of the reactors was of porous ceramics and, as fine-grained materials, a powder obtained by pulverization of roasted mixtures of 50 % Al_2O_3 and 50 % clay was used and tabelled particles of the same mixture, with an addition of about 10 % Fe oxide. Mixtures of mean particle diameters of 150, 230 and 280 were used. The effect of the ratio of particle layer height to apparatus diameter was studied for a stationary particle layer. The

Card 1/2

effect of linear gas speed and the effect of apparatus diameter on mixing efficiency were also studied. The data, analyzed mathematically, show that the efficiency, with which the particles are mixed is proportional to the linear gas speed and the particle size, and inversely proportional to the ratio of layer height to apparatus diameter. The mixing of particles never reached the ideal and, therefore, in all calculations related to fluidized bed reactors, the actual efficiency of mixing of solid particles must be ascertained and taken into account. There are 6 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publication read as follows: E.R. Gilliland, E.A. Mason, and R.C. Oliver, Ind.Eng.Chem., 1953, v. 45, no. 6, 1177; G.H. Reman, Chem. Ind., 1955, v. 3, 46.

ASSOCIATION: Yaroslavskiy nauchno-issledovatel'skiy institut monomerov dlya SK (Yaroslav Scientific Research Institute of Monomers for Synthetic Rubber)

SUBMITTED: August 31, 1959

TYURYAYEV, I. Ya.; TSAYLINGOL'D, A.L.; BUYLOV, A.B.

Inhomogeneity of a fluidized catalyst bed. Khim.prom. no.5:356-359 My '61. (MIRA 14:6)

1. Nauchno-issledovatel'skiy institut monomerov dlya SK.
(Catalysts) (Fluidization)

TYURYAYEV, I. Ya.; BALASHOVA, T.L.

Rate of carbon formation in the vacuum dehydrogenation of isopentane-isoamylene mixture to isoprene. Kin. i kat. 2 no.2:247-251 Mr-Ap '61. (MIRA 14:6)

1. Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka, Yaroslavl'.
(Isoprene) (Dehydrogenation)

S/195/61/002/003/007/009
E071/E412

AUTHORS: Tyuryayev, I.Ya., Kolobikhin, V.A.

TITLE: The velocity of dehydrogenation of a mixture of n-butylenes on an industrial catalyst on dilution with water vapour

PERIODICAL: Kinetika i kataliz, v.2, no.3, 1961, 429-434

TEXT: The velocity of the dehydrogenation reaction of a mixture of n-butylenes (C_4H_6 not more than 2.6%; n-C_4H_{10} not more than 2.5 and n-C_4H_8 not less than 94 vol.%) on dilution with water vapour in a laboratory isothermal, direct flow reactor (diameter 18 mm) at 580 to 620°C and ratios of C_4H_8 to H_2O = 1:10 to 1:30, in the range of volume velocities of 1000 to 4000 hr-1 was investigated. An industrial type of catalyst, developed by one of the authors (Abstractor's note: No details given.) of a particle size of 1 mm, in a bed height of 5 mm was used for the experiments. It was found that a further decrease in the particle size of the catalyst has no influence on the yield of C_4H_6. The regeneration of the catalyst was done with a steam-air mixture. The investigation of the changes in the activity of the catalyst indicated that it depends only on the temperature and time. The maximum yield in

Card 1/4

The velocity of dehydrogenation ...

all cases was obtained at 580°C after 2.5 hours and at 600 to 620°C after 1.5 hours from the beginning of an experiment. Kinetics of the reaction were studied under conditions of maximum activity of the catalyst over a period of 20 minutes. The experimental results fitted the equation $r = kP^n_{C_4H_8}$, where r is initial velocity of the reaction, k and n are constants and $P_{C_4H_8}$ the partial pressure of butylenes. It was found that n = 0.35 and k at 580°C - 0.0435, at 600°C - 0.0620 and at 620°C - 0.0835. The temperature dependence of the velocity constant k

$$\lg k = \frac{-24800}{4.575\,T} + 5.03$$

In discussing the causes of the variation in the activity of the catalyst with the time of reaction, it was pointed out that carbon deposition on the catalyst increases nearly linearly with time and has no influence on its specific surface, while the activity shows distinct maxima, thus the decrease in the activity is not due to carbon deposition. It is therefore possible that the decrease in the activity is due to some chemical changes resulting from an interaction of some components of the catalyst

with the surrounding medium. The characteristic feature of the process is the change in the yields of divinyl on dilution: at high butylene feeding rates (above 1000 hr^{-1} at 580 to 600°C and above 2000 hr^{-1} at 620°C) the yields increase with decreasing degree of dilution, at lower feeding rates the yields increase with an increasing degree of dilution. On the basis of the results obtained by the present authors in the present and previous work (Ref.7: Zh. fiz. khimii, v.35, 776, 1961) the reaction of butylene diluted with water vapour on an industrial catalyst in the temperature range 560 to 620°C can be represented by the following scheme

1. н.-$C_4H_8 \rightleftarrows C_4H_6 + H_2$;
2. $C_4H_8 \rightarrow 0{,}098\,CH_4 + 0{,}024\,C_2H_4 + 0{,}017\,C_3H_6 + 0{,}68\,C_4H_8 + 1{,}06\,C$;
3. $H_2O + 0{,}5068\,C \rightarrow 0{,}493\,CO_2 + 0{,}0137\,CO + H_2$;
4. н.-$C_4H_8 \rightleftarrows i C_4H_8$;
5. и $C_4H_8 + iC_4H_8 \rightarrow CH_4 + C_3H_8$,
   $\rightarrow C_2H_4 + C_2H_6$,
   $\rightarrow C_nH_m +$ aromatic hydrocarbons / ароматические углеводороды.

Card 3/4

In this work the velocity of dehydrogenation reaction (1) and the apparent velocity of formation of divinyl were investigated; the velocity of reactions (2) and (3) was studied previously (Ref.7: as quoted above). Therefore, the velocity of reverse-hydrogenation reaction as well as of the cracking reaction (5) can be determined from the difference. The role of reaction (4) under industrial conditions is small. A.A.Balandin, O.K.Bogdanova, N.A.Shcheglova, S.Ya.Pshezhetskiy and C.K.Boreskov are mentioned in the article for their contributions in this field. There are 4 figures, 2 tables and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to an English language publication reads as follows:
Ref.3: L.H.Beckberger, K.M.Watson, Chem. Eng. Progr., v.44. 229, 1948.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK Yaroslavl' (The Scientific Research Institute of Monomers for SK Yaroslavl')

SUBMITTED: November 27, 1960 (initially)
February 7, 1961 (after revision)

BUYLOV, A.B.; [illegible], [illegible]

Determination of the size of paraffin [illegible] grids. Zhur. prikl. khim. 37 no.8:[illegible] Ag '64. (MIRA 17:11)

1. Nauchno-issledovatel'skiy institut [illegible] dlya [illegible]cheskogo kauchuka.

S/080/61/034/002/014/025
A057/A129

AUTHORS: Tyuryayev, I.Ya., Yerofeyeva, A.V.

TITLE: Kinetics of butane dehydrogenation in suspended catalyst bed

PERIODICAL: Zhurnal Prikladnoy Khimii, v 34, no 2, 1961, 370-375

TEXT: Regularities of butane dehydrogenation in suspended catalyst beds were investigated and the effect of height H of the catalyst layer, the diameter D of the reactor, the particle size d of the catalyst, temperature and the butane inflow rate F on the butylene yield and selectivity of the process were studied. It was observed that the butylene yield and selectivity is lower than in reactors with an immobile catalyst bed. This is explained by the effect of mixing and the passage of the gas. Technological data on dehydrogenation of n-butane were published by V.S. Aliyev et al. (Ref 1: Azerb. neft. khoz., 7, 36 (1959), 8, 37 (1959)), but no comparisons between suspended and immobile catalyst bed processes were made.

Card 1/8

Kinetics of butane dehydrogenation ...

Oxydation rate of SO_2 in suspended catalyst beds was studied by M. Goldman et al. (Ref 4: J. Appl. Chem., 7,5, 274 (1957)), and T.G. Traber et al. (Ref 5: Tr. LTI im. Lensoveta, 54, 53 (1959)). The latter observed that oxydation rate decreases linearly with decreasing gas flow rate, and explained this by the effect of gas mixing. The present investigations were carried out with n-butane containing n-C_4H_{10} 99.2-99.6 volume %, C_4H_8 0-0.4%, iso-C_4H_{10} 0.3-0.5%, C_5 0.3-0.6%, and a finely-grained catalyst (Tab.) in a laboratory apparatus consisting of a vertical tubular furnace supply system and gas separation system. Temperature was measured with a ПП (PP) potentiometer. Samples of the contact gas were analyzed during the experiment and at the end on a ЦИАТИМ-5IУ (TsIATIM-5IU) apparatus. The effect of the H/D ratio was studied in a reactor with D = 25 mm at 550°C using the catalyst mixture no. 1 and changing the H/D ratio = 1, 2, 4, and 6. The obtained dependence of butylene yield per run on the ratio W/F (W = weight of the catalyst in grams) is given in Fig 1. It can be seen that at W/F > 20 yields increase with H/D ratio, while at higher linear velocities yields decrease with increasing H/D ratio. For this condition

Card 2/8